

WHAT IS CLAIMED IS:

1 1. A system for infusing a fluid into a patient,
2 the system comprising:
3 a volume of fluid;
4 a temperature altering device in close proximity to
5 the volume of fluid to heat or cool the volume of fluid to a
6 desired temperature;
7 a positive pressure device to place the volume of
8 fluid under positive pressure while at the desired
9 temperature; and
10 a transfer member to transfer at least some of the
11 fluid into the patient while at the desired temperature.

1 2. A system as in claim 1, wherein the temperature
2 altering device comprises a heater, and wherein the desired
3 temperature is within the range from about 36 ° C to about 42
4 ° C.

1 3. A system as in claim 1, wherein the temperature
2 altering device comprises a cooler, and wherein the desired
3 temperature is within the range from about 0 ° C to about 35 °
4 C.

1 4. A system as in claim 1, further comprising a
2 reservoir for holding the volume of fluid, wherein the
3 transfer member is operably connected to the reservoir, and
4 further comprising a flow regulator to regulate the flow of
5 the fluid from the reservoir and into the transfer member.

1 5. A system as in claim 4, wherein the flow
2 regulator comprises a controller which regulates the
3 application of pressure from the positive pressure device.

1 6. A system as in claim 5, wherein the flow
2 regulator regulates both the rate and the volume of fluid
3 removed from the reservoir.

1 7. A system as in claim 4, wherein the reservoir
2 comprises a compressible bag.

1 8. A system as in claim 1, wherein the transfer
2 member comprises a length of tubing.

1 9. A system as in claim 1, further comprising a
2 controller to monitor the temperature of the volume of fluid
3 and to control actuation of the temperature altering device.

1 10. A system as in claim 1, wherein the temperature
2 altering device comprises a housing having inner walls which
3 define a chamber, wherein the fluid is held within the
4 chamber, and wherein the housing includes temperature altering
5 elements to heat or cool the inner walls of the housing to
6 alter the temperature of the fluid.

1 11. A system as in claim 10, wherein the
2 temperature altering elements are selected from the group of
3 elements consisting of electrical resistors, chemicals, frozen
4 liquids, heated liquids, heated gases, radio frequency
5 electrodes, and thermoelectric crystals.

1 12. A system as in claim 1, wherein the positive
2 pressure device comprises a plate and a compressor for moving
3 the plate against the volume of fluid to compress the fluid.

1 13. A system as in claim (11) wherein the compressor
2 is selected from the group of compressors consisting of
3 springs, hydraulics, and solenoids.

1 ★ 14. A system as in claim 1, wherein the positive
2 pressure device comprises a bladder and a pressure source to
3 expand the bladder against the volume of fluid.

1 15. A system as in claim 1, wherein the volume of
2 fluid is selected from the group of fluids consisting of
3 blood, saline solutions, drugs, and solutes.

1 16. A method for infusing a fluid into a patient,
2 the method comprising:
3 providing a volume of liquid which is at an initial
4 temperature;
5 altering the temperature of the fluid until the
6 fluid is at a desired temperature; and
7 pressurizing the fluid while at the desired
8 temperature to introduce the fluid into the patient at the
9 desired temperature.

1 17. A method as in claim 16, further comprising
2 regulating the pressure applied to the fluid to introduce the
3 fluid into the patient at a predetermined rate and volume.

1 18. A method as in claim 16, further comprising
2 flowing the pressurized liquid through a tube which is
3 intravenously inserted to the patient to introduce the fluid
4 into the patient.

1 19. A method as in claim 16, further comprising
2 heating the fluid to the desired temperature which is within
3 the range from about 36 ° C to about 42 ° C.

1 20. A method as in claim 16, further comprising
2 cooling the fluid to the desired temperature which is within
3 the range from about 0 ° C to about 35 ° C.

1 21. A method as in claim 16, wherein the
2 temperature altering step comprises placing the volume of
3 fluid into a housing having inner walls which define and
4 chamber and heating or cooling the inner walls to alter the
5 temperature of the fluid.

1 22. A method as in claim 16, wherein the
2 pressurizing step comprises compressing the volume of liquid
3 with a plate.

1 23. A method as in claim 16, wherein the
2 pressurizing step comprises inflating a bladder which presses
3 against the volume of fluid.

1 24. A method as in claim 16, wherein the volume of
2 fluid is selected from the group of fluids consisting of
3 blood, saline solutions, drugs, and solutes.

1 25. A method as in claim 16, wherein the volume of
2 fluid is held within a compressible bag, and wherein the
3 temperature of the fluid is altered while within the bag.